REMARKS

Claims 1-15 and 30-39 are pending in the application. Claims 16-29 were previously cancelled.

Examiner's Rejections and Applicant's Brief Response

The examiner rejects claims 1-21, 23-33, 38, and 39 under 35 USC §102(e) as anticipated by Kitagawa (USPN 6,624,613 B2). However, claims 1-15 and 30-39 are pending in the application, and claims 16-29 were previously cancelled. It appears that the examiner copied the rejection from a previous Office Action, without considering the previously cancelled claims. Considering the cancelled claims, the applicant responds to the present Office Action assuming that the examiner rejects claims 1-15, 30-33, 38, and 39 under 35 USC §102(e) as anticipated by Kitagawa. The Applicant respectfully amends independent claims 1, 11, and 30, and dependent claim 34 to overcome this rejection.

The examiner rejected claims 34, 36, and 37 under 35 USC 103(a) as being unpatentable over Kitagawa, as applied to claim 32, and in view of Leifer (USPN 6,459,171 B1). Applicant respectfully traverses this rejection by virtue of their dependency on presumably allowable and amended independent claim 30.

The examiner rejected claim 35 under 35 USC 103(a) as being unpatentable over Kitagawa, as applied to claim 34, and in view of Leifer (USPN 6,459,171 B1), and further in view of Mole, et al. (USPN 6,522,873B1). Applicant respectfully traverses this rejection by virtue of claim 35 ultimate dependency on presumably allowable and amended independent claim 30.

Summary of the Examiner's Arguments

In the present Office Action, the examiner maintains that Kitagawa teaches that the same on/off control of the switches as in the charge control is performed during discharge (col. 17, lines 52-54 (FIG. 40), and col. 18, lines 13-17 (FIG. 41)). Further, the examiner maintains that Kitagawa shows both switches intermittently turned on and off based on the on/off control during a discharge state (col. 17, lines 52-54 (FIG. 40)).

Kitagawa Disclosure

Kitagawa generally teaches, as follows: "The present invention provides a battery charging/discharging method for effectively using the battery energy of a power supply apparatus with a plurality of chargeable batteries." (Abstract)

Kitagawa describes a problem with conventional power supplies, as follows: "In the conventional example shown in FIG. 1, since only one chargeable battery 14 (a single package) can be used, there was a problem that the operation hours of a device driven by the battery cannot be extended by connecting a plurality of chargeable batteries in parallel. This is because when there is an imbalance in the charge states of batteries connected in parallel, energy flows from charged batteries to less-charged batteries, and such a charging overcurrent which occurs in this situation may damage the batteries." (col. 1, lines 52-60)

Kitagawa describes a solution to the problem, as follows: "By controlling the switches for controlling the charge or discharge current of each battery, the ON/OFF control unit prevents a current from flowing back from charged batteries to less-charged batteries, if there is an imbalance in the charge states of the batteries."

Kitagawa describes a discharge method, as follows: "For the discharge method of the plurality of chargeable batteries of the present invention, when the status of the power supply apparatus shifts from a battery charging state to a battery discharging state, for example, a control is performed so that out of two batteries, one battery during charging may be first discharged, and after the apparatus detects the completion of the discharging, the other battery is discharged" (col. 3, lines 13-20, emphasis added).

Kitagawa further describes a discharge method, as follows: "In the seventh embodiment the power supply apparatus moves to a discharging state in a condition where the charge has been so far controlled, that is, the on/off operation of the two switches has been maintained. When out of the two switches, for example, a switch 12x is switched on and a battery 14x is charged, the state of the switched is maintained so that the battery 14x is discharged first. Then, after the discharging of this battery 14x is completed, the other battery 14y is discharged in the same way as the sixth embodiment shown in FIG. 24." (col. 13, lines 36-46, emphasis added)

Kitagawa further describes discharge a method, as follows: "FIG. 28 shows the eighth embodiment of the ON/OFF control circuit of the present invention. In this eighth embodiment, when the status of the batteries of the power supply apparatus charges to a discharging state, the

detection of the current direction of the batteries is performed, a switch corresponding to the battery in which the battery current flows in a charging direction is switched off, and the other battery is discharged. Then, every time a certain time elapses, the directions of the battery currents are detected, and the control corresponding to the result is repeated in the same way." (col. 14, lines 17-27, emphasis added)

Kitagawa further describes a discharge method, as follows: "FIG. 40 is a flowchart showing a process corresponding to the ON/OFF control circuit of the eighth embodiment shown in FIG. 28. In FIG. 40, the same on/off control of the switches as in the charge control shown in FIG. 36 is performed, and the discharging is performed. That is, as a result of the detection of the battery current direction, a switch corresponding to the battery in which the current direction is the reverse of a target discharging is switched off, and discharging is performed. Then, the current direction is detected for each a certain time, and the control is maintained. Then, if in step S67 it is judged that the discharging of both batteries is completed, in step S68 both switches are switched off and the process is terminated.

FIG. 41 is a flowchart showing a process corresponding to the ON/OFF control circuit of the ninth embodiment shown in FIG. 30. In FIG. 41, the same on/off control of the switches as that for charging as shown in FIG. 35 is performed as a discharging control. That is, the detections of the current directions of both batteries are performed, a switch corresponding to the battery whose current flow is in a charging direction is switched off, and the other battery is discharged. After the voltages of both batteries become equal, the former battery is also discharged. When in step S76 it is judged that the discharging of both batteries is completed, in step S77 both switches are switched off, and the process is terminated." (col. 17, line 50 – col. 18, line11, , emphasis added)

Applicant's Summary of Kitagawa

Kitagawa appears to disclose charging and discharging two batteries. Kitagawa shows in FIG. 38, during a discharge method, the one battery is completely discharged first, and then the other battery is completely discharged second, without alternating between the two batteries. As the Examiner indicates, FIGs. 40 and 41 show discharge methods, wherein both batteries are switched on initially (e.g. S61) to discharge together. However, if current detectors indicate a flow back of current between the batteries (i.e., a charging condition of the lower voltage battery), then the battery experiencing the charging condition is switched off (S66 or S63) for a certain time (S64) to

wait for the second battery voltage to discharge to a non-charging level. After the certain time, the previously charging battery is switched on again. Alternatively, the battery can again be switched on upon detecting that the voltages of both batteries are again equal (S80 or S74 in FIG. 41).

Applicant's Response to the Examiner's Characterization of Kitagawa

Kitagawa does not teach or suggest that the Pulse Width Module (PWM) Control Unit 25 controls discharging, as suggested by the Examiner in the 102(e) rejection of claim 1, but rather the PWM control unit controls the charging 11, as explained in the Applicant's last response dated April 13, 2006, as follows:

> "In rejecting independent claim 1, the rejection asserts that Kitagawa at FIG. 3 and component 25 teaches "a power management module configured to operate each of the first and second batteries in a pulse current discharge mode while supplying continuous current to a load." Upon careful reading of the disclosure at column 5, lines 39-51, the disclosure discloses the PWM control circuit 25 controls the on/off of the FET 21 when the batteries 14x and 14y are to be charged. Further, at column 7, lines 8-35, the passage describes use of the PWM control circuit 25 to control charging of the batteries at a constant voltage mode or constant current mode. Also, at column 8, lines 48-67, describes that FET 21 is always on regardless of the output of the PWM control circuit when discharging the batteries. This passage does not describe that the PWM control circuit 25 operates the two batteries in a pulse current discharge mode while supplying continuous current to a load."

Kitagawa, at col. 11, lines 31-45 relates to charging and not to discharging, as suggested by the Examiner in the 102(e) rejection of claim 1.

Kitagawa does not teach or suggest a "wireless communication device," as suggested by the Examiner in the 103(a) rejection of claim 30. The Examiner's reference to Kitagawa's reference to col. 1, lines 14-15, disclose a portable notebook computer. The Examiner's statement about a "notebook personal computer has a CPU capable of supporting wireless communication such as WLAN IEEE 802.11" is not taught or suggested by Kitagawa, and appears to be an imported teaching by the Examiner.

Kitagawa does not teach or suggest an idle state, as properly suggested by the Examiner in the 102(e) rejection of claim 34, and also does not teach or suggest a traffic state, which was not properly addressed by the Examiner in claim 34.

Leifer's Teaching

Leifer teaches: "It is appreciated that many embodiments of the present invention may be applicable to many different types of shared devices. For example, in one embodiment, it is contemplated that shared device 201 is a multi-line subscriber unit for use in a wireless local loop application. In other words, shared device 201 may be a telephone system for use by application 209, application 211 and application 213. In a multi-line subscriber unit, each application 209, 211 and 213 has a telephone. In a wireless local loop system, applications of the multi-line subscriber unit are connected to the central office through a wireless connection.

For explanation purposes only, many examples provided in this specification will be described in terms of shared device 201 including a multi-line subscriber unit shared by a plurality of applications and providing telephone communications. However, an incomplete list of other devices contemplated for shared device 201 might include one or more shared electrically powered items in a multi-tenant setting in a building, such as for example but not limited to an electric furnace, air conditioning, a water heater, a security gate, exercise equipment, a swimming pool heater, indoor or outdoor lighting, etc. In addition, many of the illustrations provided in this specification show a plurality of N equals three applications, power sources, switches, etc. It is appreciated of course that embodiments of the present invention are not limited to a plurality of three applications sharing power." (col. 3, lines 41-66)

Applicant's Response

It appears that the Examiner is interpreting Kitagawa's switching off of one battery and leaving one the other battery, responsive to a charging condition, during the discharging process, as disclosed in FIGs. 40 and 41, for example, anticipates the claimed: "a power management module configured to operate each of the first and second batteries in a pulse current discharge mode while supplying continuous current to a load," as claimed in claim 1, for example.

Kitagawa and Leifer do not appear to teach either alone or in combination a "operating each of the first and second batteries in a pulse current discharge mode while supplying continuous

current to a load, responsive to the wireless communication device being in a traffic state," as now claimed in independent claims 1, 11, and 30. More particularly, neither Kitagawa nor Leifer teaches or suggests a "wireless communication device operating in a traffic state."

Support for the present amendment may be found in FIG. 4, blocks 408 and 412, for example.

No new matter has been added by this amendment.

Summary of the Office Action

Accordingly, the rejection of independent claims 1, 11, and 30 under 35 USC §102(e) as anticipated by Kitagawa should be withdrawn in the next Office action. And, at least by virtue of their dependency on the independent claims 1, 11, and 30, the corresponding dependent claims also should be withdrawn in the next Office Action.

In view of the above remarks and amendments, Applicants believe that claims 1-15 and 30-39 are in condition for allowance, and passage of this case to allowance is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. §1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 17-0026 and please credit any excess fees to such deposit account.

Respectfully submitted,

Dated: March 23, 2007

By: /Donald C. Kordich/
Donald C. Kordich
Registration No. 38,213
(858) 658-5928

QUALCOMM Incorporated
5775 Morehouse Drive
San Diego, California 92121
Telephone: (858) 651-4125
Facsimile: (858) 658-2502